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Methoxyfenozide/121027 /Dow AgroSciences/62719
DACO 7.4.1/OPPTS 860.1500/OECD IIA 6.3.1, 6.3.2, 6.3.3 and IIIA 8.3.1, 8.3.2, 8.3.3
Crop Field Trial – Non-Grass Animal Feed

Primary Evaluator	W. Cutchin, Acting Branch Senior Scientist RIMUERB/ARIA	Date: 11/5/07
Approved by	D. Rate. Biologist RIMUERB/ARIA	

STUDY REPORTS:

MRID No. 46986201 Dolder, S.; Lindsay, D. (2005) Magnitude of the Residue of Methoxyfenozide in Alfalfa and Clover. Project Number: 040072, Unpublished study prepared by Dow AgroSciences LLC. 70 p.

EXECUTIVE SUMMARY:

Dow AgroSciences, LLC has submitted field trial data for methoxyfenozide on alfalfa and clover. Nine field trials were conducted during the 2004 growing season. Four of the alfalfa trials were in NAFTA growing region 5 with additional trials in regions 1, 7, 9, 10 and 11. Two of the clover trials were in region 5 with the remaining trials in regions 1, 2, 4, 6, 7, 8, and 10. The number and locations of field trials are in accordance with OPPTS Guideline 860.1500. At each test location, four applications of methoxyfenozide were applied to the treated plots as a foliar broadcast spray at the rate of approximately 0.125 lb ai/A (maximum season total of 0.5 lb ai/A) using and adjuvant with preharvest interval (PHI) for alfalfa and clover of 0- and 3-days for forage and 3-days for hay.

The residue field trial samples were analyzed using the high performance liquid chromatography with tandem mass spectrometry (LC/MS/MS) method designated GRM 02.24(4). Concurrent method validation was accomplished by fortification of untreated control samples of alfalfa and clover forage with methoxyfenozide at levels of 0.02, 0.2, 1.0, and 80.0 ppm with recoveries from 70 to 104%. Concurrent method validation on hay was accomplished by fortification of untreated control samples of alfalfa and clover at 80 ppm with recoveries from 102 to 108%. The limit of detection (LOD) and limit of quantitation (LOQ) in all matrices were 0.006 ppm and 0.02 ppm, respectively.

The results from these trials show that methoxyfenozide residues in the alfalfa field trials were 9.86-31.44 ppm and 5.71-47.27 ppm on forage at 0- and 3-day PHIs, respectively. Residues on alfalfa hay ranged from 12.85-59.11 ppm. In the clover field trials, residues of 3.74-15.79 ppm and 1.55-14.98 ppm were seen on forage at 0- and 3-day PHIs, respectively. Residues on clover hay ranged from 5.03-59.91 ppm. The submitted storage stability data are adequate to indicate that the residues were stable under the conditions in which the samples were held between harvest and analysis.

STUDY/WAIVER ACCEPTABILITY/DEFICIENCIES/CLARIFICATIONS:

Rec'd in RAC 11/14/2007 GW

Under the conditions and parameters used in the study, the field trial residue data are classified as scientifically acceptable.

The acceptability of this study for regulatory purposes is addressed in the forthcoming U.S. EPA Residue Chemistry Summary Document, DP Num: 334471

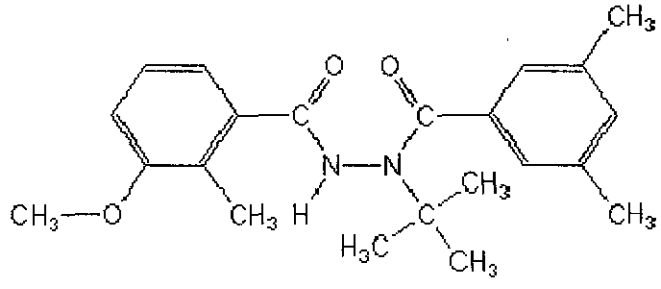
COMPLIANCE:

Signed and dated Good Laboratory Practice (GLP), Quality Assurance and Data Confidentiality statements were provided. There were minor deviations from regulatory requirements: collection of weather and irrigation data, test site history, maintenance chemicals application, field sample weights and soil properties. Also, some sampling data captured by Ashgrow Crop Management was not recorded and/or initialed and dated on the day of occurrence. These deviations, however, do not affect the conclusions of the study.

A. BACKGROUND INFORMATION

Methoxyfenozide belongs to the diacylhydrazine class of insecticides and is effective against many species of lepidoptera insects. It has a novel mode of action that mimics the action of molting hormones of moth larvae. It must be ingested by larvae to be effective. Upon ingestion, moth larvae undergo an incomplete and premature molt, which ultimately results in their death. Intrepid works best against internal feeders such as codling moth, oriental fruit moth and leafminers when application is just prior to egg hatch. Methoxyfenozide products (Intrepid 2F and Intrepid 80 WSP) have virtually no effect on any other type of insect, spider, or crustacean. This selectivity allows beneficial insects (including bees) to function unimpeded in the management of secondary pests while Intrepid provides control of troublesome lepidoptera pests.

TABLE A.1. Test Compound Nomenclature

Compound	Chemical Structure
	
Common name	1Methoxyfenozide
Company experimental name	RH-2485
IUPAC name	*N-tert*-butyl-*N'*-(3-methoxy-*o*-toluoyl)-3,5-xylohydrazide

CAS name	3-methoxy-2-methylbenzoic acid 2-(3,5-dimethylbenzoyl)-2-(1,1-dimethylethyl)hydrazide
CAS #	161050-58-4
End-use product/(EP)	Intrepid 2F Insecticide (EPA Reg. No. 62719-442), Intrepid 80 WSP (EPA Reg. No. 62719-438)

TABLE A.2. Physicochemical Properties of the Technical Grade Test Compound

Parameter	Value	Reference
Melting point/range	204 to 206°C	Mayer, 1995a[1], 1995b[2],1996a[3], and1996b[4]
pH	7.1	
Density	0.634 g/cm^3	
Water solubility (20°C)	3.3 ppm	
Solvent solubility (g/kg at 25°C)	Butyl acetate:18.8, Acetone: 127	
Vapour pressure at 25°C	< 1.33 x 10^{-5} Pa	
Dissociation constant (pK$_a$)	Not applicable	
Octanol/water partition coefficient Log(K$_{OW}$)	33.72 (pH 7, 25°C)	
UV/visible absorption spectrum	203 nm	

[1] Mayer, A.L. 1995a. The melting point of RH-112485 technical and purified active ingredient, Rohm and Haas Company, Report No. APR-95-289, ER Ref. No.8.5. Unpublished.
[2] Mayer, A.L. 1995b. The solubility of RH-112485 Technical in organic solvents. Rohm and Haas Report No. APR-95-291. Unpublished.
[3] Mayer, A. L. 1996a. The physical and chemical properties of RH-112485. Ricerca, Inc., Rohm and Haas Report No. APR-95-415 (Product Chemistry Series 63). Unpublished.
[4] Mayer, A. L. 1996b. The physical and chemical properties of RH-112485, supplement to Rohm and Hass Report APR-95-415 regarding the water solubility of RH-112485. Rohm and Haas Report No. APR-96-319. Unpublished.

B. EXPERIMENTAL DESIGN

B.1. Study Site Information

TABLE B.1.1 Trial Site Conditions

Trial Identification (City, State/Year)	Soil characteristics				Meteorological data	
	Type	%OM	pH	CEC meq/g	Monthly Rainfall range	Overall Temp. range
Alfalfa 1 (Mineral, VA /2004)	Sandy loam	NR[1]	NR	NR	7.8-8.1	49-91
Alfalfa 2 (Carlyle, IL /2004)	Silt loam	NR	NR	NR	1.1-6.9	47-84
Alfalfa 3 (Danville, IN /2004)	Silt loam	NR	NR	NR	3.1-6.3	56-84
Alfalfa 4 (Paynesville, MN /2004)	Sandy loam	NR	NR	NR	4.8-7.1	55-80
Alfalfa 5 (Frankfort, SD /2004)	Silt loam	NR	NR	NR	1.5-1.8	49-85
Alfalfa 6 (Redfield, SD /2004)	Silt loam	NR	NR	NR	1.5-1.8	49-85

Alfalfa 7 (Trenton, UT /20040	Sandy loam	NR	NR	NR	0-0.8	49-91
Alfalfa 8 (Porterville, CA /2004)	Sandy loam	NR	NR	NR	0-0	60-95
Alfalfa 9 (American Falls, ID /2004)	Loam	NR	NR	NR	0.1-0.3	48-85
Clover 1 (Mineral, VA /2004)	Sandy loam	NR	NR	NR	7.8-8.1	49-91
Clover 2 (Montpelier, VA /2004)	Sandy loam	NR	NR	NR	7.6-12.3	51.89
Clover 3 (Marion, AR /2004)	Silt loam	NR	NR	NR	1.3-6.4	64-88
Clover 4 (Carlyle, IL /2004)	Silt loam	NR	NR	NR	1.1-6.9	47-84
Clover 5 (Paynesville, MN /2004)	Sandy loam	NR	NR	NR	4.8-7.1	55-80
Clover 6 (Madill, OK /2004)	Sandy loam	NR	NR	NR	0.5-2.4	57.89
Clover 7 (Redfield, SD /2004)	Silt loam	NR	NR	NR	1.5-1.8	49-85
Clover 8 (Claude, TX /2004)	Silt loam	NR	NR	NR	0.7-2.4	59-90
Clover 9 (Porterville, CA /2004)	Sandy loam	NR	NR	NR	0-0	60-95
[1]NR = Not Reported						

The actual temperatures were near historical values. Rainfall averages were near historical levels except for four sites that were higher than normal: Clover 1, Clover 2, Alfalfa 1, and Alfalfa 4. Irrigation was used to supplement as needed.

TABLE B.1.2. Study Use Pattern.

Location (City, State/Year)	EP [1]	Application					Tank Mix Adjuvants
		Method/Timing (BBCH Code)[2]	Vol, GPA[3]	Rate, (lb ai/A)	RTI, [4] days	Total Rate, (lb ai/A)	
Alfalfa 1 (Mineral, VA /2004)	Intrepid 2F	Broadcast – 63	14.0	NR[5]	NA	0.50	Agridex
		" – 65	14.3	NR	7		
		" – 63	14.3	NR	33		
		" – 65	14.2	NR	7		
Alfalfa 2 (Carlyle, IL /2004)	Intrepid 2F	Broadcast – 45	10.8	NR	NA	0.51	Agridex
		" – 61	10.5	NR	7		
		" – 51	12.0	NR	26		
		" – 59	11.0	NR	7		
Alfalfa 3 (Danville, IN /2004)	Intrepid 2F	Broadcast – 61	16.8	NR	NA	0.50	Agridex
		" – 65	19.9	NR	7		
		" – 49	11.6	NR	19		
		" – 55	12.7	NR	9		
Alfalfa 4 (Paynesville, MN /2004)	Intrepid 2F	Broadcast – 60	16.7	NR	NA	0.50	Agridex
		" – 61	16.5	NR	7		
		" – 60	16.6	NR	26		
		" – 61	16.6	NR	7		
Alfalfa 5 (Frankfort, SD /2004)	Intrepid 2F	Broadcast – 62	16.5	NR	NA	0.50	Agridex
		" – 63	16.6	NR	7		
		" – 61	16.5	NR	21		
		" – 63	16.6	NR	7		

TABLE B.1.2. Study Use Pattern.

Location (City, State/Year)	EP [1]	Application					Tank Mix Adjuvants
		Method/Timing (BBCH Code)[2]	Vol, GPA[3]	Rate, (lb ai/A)	RTI, [4] days	Total Rate, (lb ai/A)	
Alfalfa 6 (Redfield, SD /2004)	Intrepid 2F	Broadcast – 62	16.6	NR	NA	0.51	Agridex
		" – 63	16.6	NR	7		
		" – 61	16.6	NR	21		
		" – 63	16.7	NR	7		
Alfalfa 7 (Trenton, UT /20040	Intrepid 2F	Broadcast – 47	11.2	NR	NA	0.49	Agridex
		" – 48	13.7	NR	7		
		" – 46	13.9	NR	29		
		" – 48	14.3	NR	7		
Alfalfa 8 (Porterville, CA /2004)	Intrepid 2F	Broadcast – 51	13.8	NR	NA	0.51	Agridex
		" – 61	13.9	NR	7		
		" – 60	14.7	NR	29		
		" – 61	13.8	NR	7		
Alfalfa 9 (American Falls, ID /2004)	Intrepid 2F	Broadcast – 47	11.4	NR	NA	0.51	Agridex
		" – 49	13.5	NR	7		
		" – 47	14.1	NR	30		
		" – 48	14.3	NR	7		
Clover 1 (Mineral, VA /2004)	Intrepid 2F	Broadcast – 63	14.5	NR	NA	0.50	Agridex
		" – 65	14.3	NR	7		
		" – 63	14.3	NR	29		
		" – 65	14.3	NR	7		
Clover 2 (Montpelier, VA /2004)	Intrepid 2F	Broadcast – 63	14.3	NR	NA	0.50	Agridex
		" – 65	14.3	NR	7		
		" – 63	14.3	NR	33		
		" – 65	14.3	NR	7		
Clover 3 (Marion, AR /2004)	Intrepid 2F	Broadcast – 65	13.3	NR	NA	0.50	Agridex
		" – 65	13.4	NR	7		
		" – 64	13.4	NR	26		
		" – 65	13.5	NR	7		
Clover 4 (Carlyle, IL /2004)	Intrepid 2F	Broadcast – 61	10.8	NR	NA	0.51	Agridex
		" – 65	10.5	NR	7		
		" – 61	12.2	NR	26		
		" – 61	11.0	NR	7		
Clover 5 (Paynesville, MN /2004)	Intrepid 2F	Broadcast – 60	16.6	NR	NA	0.50	Agridex
		" – 62	16.5	NR	7		
		" – 60	16.6	NR	26		
		" – 61	16.5	NR	7		

TABLE B.1.2. Study Use Pattern.

Location (City, State/Year)	EP [1]	Application					Tank Mix Adjuvants
		Method/Timing (BBCH Code)[2]	Vol, GPA[3]	Rate, (lb ai/A)	RTI, [4] days	Total Rate, (lb ai/A)	
Clover 6 (Madill, OK /2004)	Intrepid 2F	Broadcast – 61	11.3	NR	NA	0.50	Agridex
		" – 62	11.1	NR	7		
		" – 63	11.2	NR	16		
		" – 63	11.2	NR	7		
Clover 7 (Redfield, SD /2004)	Intrepid 2F	Broadcast – 62	16.7	NR	NA	0.50	Agridex
		" – 63	16.6	NR	7		
		" – 61	16.5	NR	21		
		" – 63	16.6	NR	7		
Clover 8 (Claude, TX /2004)	Intrepid 2F	Broadcast – 62	11.1	NR	NA	0.51	Agridex
		" – 64	11.2	NR	7		
		" – 60	11.2	NR	35		
		" – 63	11.0	NR	7		
Clover 9 (Porterville, CA /2004)	Intrepid 2F	Broadcast – 51	13.8	NR	NA	0.50	Agridex
		" – 61	14.5	NR	7		
		" – 60	14.8	NR	24		
		" – 60	15.0	NR	7		

[1] EP = End-use Product
[2] BBCH = Biologische Bundesanstalt, Bundessortenamt and Chemical growth stage scale.
[3] Gallons per acre
[4] Retreatment Interval
[3] NR = Not Reported

TABLE B.1.3. Trial Numbers and Geographical Locations

NAFTA Growing Region	Alfalfa		Clover	
	Submitted	Requested	Submitted	Requested
1	1	1	1	1
1A				
2			1	1
3				
4			1	1
5	4	4	2	2
5A				
5B				
6			1	1
7	1	1	1	1

7A				
8			1	1
9	1	1		
10	1	1	1	1
11	1	1		
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
Total	9	9	9	9

B.2. Sample Handling and Preparation

For each sampling at every site a single composite sample was taken from the control plot while duplicate, composite samples were taken independently from the treated plot. Forage was harvested at 0 and 3 days after the last application prior to the second cutting. Samples for hay were cut 3 days after the last application prior to the second cutting. The hay samples were air dried for a period of 2-6 days prior to being placed in frozen storage. Plant material was collected by hand by cutting the plant at approximately 2 inches above the ground. For each sample a minimum of either 1kg of forage or 0.5 kg of hay were collected. Samples were frozen within 4 hours of sampling and remained frozen up through being shipped to Dow AgroSciences in Indianapolis. All samples were received frozen and were stored in temperature-monitored freezers at approximately -20°C. The samples were prepared for analysis by freezing with liquid nitrogen and then ground using a Hammermill equipped with a 1/8-inch screen.

B.3. Analytical Methodology

Residues of methoxyfenozide were determined using the analytical method GRM 02.24(4). The residues were extracted from the crop by homogenizing with a 90% methanol/10% water solution. The sample was shaken, centrifuged, and an aliquot of the extract was heated, dried, reconstituted in a 90% methanol/10% water solution, diluted with water and purified using a Phenomonex Strata 96-well solid phase extraction (SPE) plate. The SPE plate was washed with a 60% water/40% methanol/0.1% formic acid solution and eluted with

acetonitrile. The eluate was then evaporated to dryness and the residues reconstituted in a 70% water/30% aectonitrile mobile phase containing 0.1% formic acid. The purified extract was then analyzed by LC/MS/MS. The LOD and LOQ in all matrices were 0.006 ppm and 0.02 ppm, respectively.

C. RESULTS AND DISCUSSION

The maximum freezer storage interval for field-treated samples was 262 days (8.7 months). The storage stability of methoxyfenozide has been demonstrated in many matrices across many crop groupings including fruit and fruiting vegetables[5,6]. Fortified residues of methoxyfenozide are stable during frozen storage for up to 705 days (23.5 months) in/on cottonseed; 360 days (12 months) in/on apples, cotton gin byproducts, and cotton refined oil; 300 days (10 months) in/on apple wet pomace; and 282 days (9.4 months) in apple juice. Residues of methoxyfenozide are also stable in tomato fruit through at least 366 days (12.2) months of freezer storage under the conditions in which the samples were held between harvest and analysis.

Control samples of forage and hay from both alfalfa and clover were fortified with methoxyfenozide and analyzed concurrently with field treated samples. Untreated control samples were fortified at 0.02-80.0 ppm and concurrent recoveries ranged from 70-106% for alfalfa and 86-108% for clover. The petitioner provided sufficient sample chromatograms and calibration curves to indicate that the analytical chromatography is free from interferences. Fortification levels, recovery ranges and average recoveries are shown in Table C.1.

Overall, the magnitude of the residue trials for methoxyfenozide on/in alfalfa and clover was performed in compliance with OPPTS 860 guidelines. Alfalfa and clover were treated with four applications of Intrepid 2F for a total application rate of approximately 0.5 lb ai/A using and adjuvant. In the alfalfa field trials, residues of 9.86-31.44 ppm and 5.71-47.27 ppm were seen on forage at 0- and 3-day PHIs, respectively. Residues on alfalfa hay ranged from 12.85-59.11 ppm (see Table C.3 and C.4). In the clover field trials, residues of 3.74-15.79 ppm and 1.55-14.98 ppm were seen on forage at 0- and 3-day PHIs, respectively. Residues on clover hay ranged from 5.03-59.91 ppm (see Table C.3 and C.4).

TABLE C.1. Summary of Concurrent Recoveries of Methoxyfenozide from Alfalfa and Clover.

Matrix	Spike level (mg/kg)	Sample size (n)	Recoveries (%)	Mean ± std dev
Alfalfa Forage	0.02	10	70,72,73,81,88, 89,95,96,97,98	85.9 ± 11.08
	0.2	9	83,86,86,89,90, 90,91,94,101	90.0 ± 5.24
	1.0	10	80,80,88,91,91, 94,96,97,99,99	91.5 ± 7.04
	80.0	2	102,104	103.0 ± 1.41
Alfalfa Hay	80.0	2	106,106	106.0 ± 0.00

Clover Forage	0.02	4	86,90,92,92	90.0 ± 2.82
	0.2	2	92,93	92.5 ± 0.71
	1.0	4	87,90,90,92	89.8 ± 2.06
	80.0	2	103,108	105.5 ± 3.54
Clover Hay	80.0	2	105,106	105.5 ± 0.71

TABLE C.2. Summary of Storage Conditions

Matrix (RAC or Extract)	Storage Temp. (°C)	Actual Storage Duration (days)	Interval of Demonstrated Storage Stability (days)
Alfalfa Forage	< - 20	251	366
Alfalfa Hay		254	
Clover Forage		262	
Clover Hay		253	

TABLE C.3. Residue Data from Alfalfa and Clover Crop Field Trials with Methoxyfenozide

Trial ID (City, State/Year)	Region	Variety	Commodity or Matrix	Total Rate,[1] (lb ai/A)	PHI (days)	Treat No.	Methoxyfenozide (ppm)[2]
Alfalfa							
Alfalfa 1 (Mineral, VA /2004)	1	Unknown	Forage	0.50	0	1	(0. 0142)
						2	16.49,14.34,15.10
					3	1	(0.007)
						2	15.17, 14.52
			Hay		3	1	(0.0096)
						2	44.12,49.65
Alfalfa 2 (Carlyle, IL /2004)	5	WL 318	Forage	0.51	0	1	(0.0072)
						2	13.11,9.86,10.96
					3	1	<0.006
						2	10.82,11.09
			Hay		3	1	(0.0129)
						2	45.78,49.68
Alfalfa 3 (Danville, IN /2004)	5	Vernal	Forage	0.50	0	1	(0.0129)
						2	18.17,17.29
					3	1	(0.0096)
						2	16.67,16.94
			Hay		3	1	(0.0066),<0.006
						2	59.11,52.84
Alfalfa 4 (Paynesville, MN /2004)	5	Blazer	Forage	0.50	0	1	(0.0075)
						2	13.73,10.22
					3	1	<0.006,<0.006,<0.006, <0.006,<0.006
						2	11.67,10.86

TABLE C.3. Residue Data from Alfalfa and Clover Crop Field Trials with Methoxyfenozide

Trial ID (City, State/Year)	Region	Variety	Commodity or Matrix	Total Rate,[1] (lb ai/A)	PHI (days)	Treat No.	Methoxyfenozide (ppm)[2]
			Hay		3	1	(0.007)
						2	27.29,38.11
Alfalfa 5 (Frankfort, SD /2004)	5	Fargo	Forage	0.50	0	1	(0.0099)
						2	21.95,19.70,20.08
					3	1	<0.006
						2	11.53,7.74
			Hay		3	1	<0.006
						2	39.74,38.56
Alfalfa 6 (Redfield, SD /2004)	7	Redwing	Forage	0.51	0	1	<0.006
						2	16.43,13.02
					3	1	(0.0067)
						2	5.71,6.45
			Hay		3	1	<0.006
						2	12.85,16.80
Alfalfa 7 (Trenton, UT /20040	9	ProLeaf	Forage	0.49	0	1	(0.0188)
						2	13.73,13.74
					3	1	<0.006
						2	17.17,14.76
			Hay		3	1	0.02
						2	42.08,42.25
Alfalfa 8 (Porterville, CA /2004)	10	Germains	Forage	0.51	0	1	0.02
						2	26.37,23.6,31.44
					3	1	(0.0087)
						2	40.51,47.27
			Hay		3	1	0.04
						2	55.29,52.62
Alfalfa 9 (American Falls, ID /2004)	11	Agate	Forage	0.51	0	1	0.04
						2	13.75,12.37
					3	1	(0.008)
						2	10.16,8.91
			Hay		3	1	0.03
						2	45.40,41.23
Clover							
Clover 1 (Mineral, VA /2004)	1	Unknown	Forage	0.50	0	1	<0.006
						2	9.31,9.90,5.39
					3	1	<0.006, <0.006, <0.006
						2	14.98,12.49

TABLE C.3. Residue Data from Alfalfa and Clover Crop Field Trials with Methoxyfenozide

Trial ID (City, State/Year)	Region	Variety	Commodity or Matrix	Total Rate,[1] (lb ai/A)	PHI (days)	Treat No.	Methoxyfenozide (ppm)[2]
			Hay		3	1	(0.0142)
						2	42.64,38.14
Clover 2 (Montpelier, VA /2004)	2	Unknown	Forage	0.50	0	1	(0.0078)
						2	9.14,11.11
					3	1	<0.006
						2	7.86,8.25,7.76
			Hay		3	1	(0.0136)
						2	19.53,21.47
Clover 3 (Marion, AR /2004)	4	Red	Forage	0.50	0	1	(0.179)
						2	10.45,10.43
					3	1	0.0215
						2	4.51,5.68
			Hay		3	1	0.0247
						2	14.64,15.04
Clover 4 (Carlyle, IL /2004)	5	Red	Forage	0.51	0	1	(0.0069)
						2	9.53,11.35
					3	1	(0.0107)
						2	9.19,13.15
			Hay		3	1	(0.018)
						2	44.86,54.25
Clover 5 (Paynesville, MN /2004)	5	Midden	Forage	0.50	0	1	<0.006
						2	7.17,8.21
					3	1	<0.006
						2	3.66,2.59
			Hay		3	1	<0.006
						2	9.34,9.30
Clover 6 (Madill, OK /2004)	6	Ladino	Forage	0.50	0	1	<0.006
						2	7.45,5.94
					3	1	<0.006
						2	6.99,6.68
			Hay		3	1	(0.008)
						2	41.24,41.45
Clover 7 (Redfield, SD /2004)	7	Midden	Forage	0.50	0	1	<0.006
						2	3.74,8.28
					3	1	<0.006
						2	1.55,1.66,1.86
			Hay		3	1	<0.006, <0.006

TABLE C.3. Residue Data from Alfalfa and Clover Crop Field Trials with Methoxyfenozide

Trial ID (City, State/Year)	Region	Variety	Commodity or Matrix	Total Rate,[1] (lb ai/A)	PHI (days)	Treat No.	Methoxyfenozide (ppm)[2]
						2	6.38,5.03
Clover 8 (Claude, TX /2004)	8	Ladino	Forage	0.51	0	1	<0.006
						2	8.84,6.61
					3	1	<0.006
						2	8.05,7.62
			Hay		3	1	(0.0081)
						2	32.91,38.10
Clover 9 (Porterville, CA /2004)	10	Ladino	Forage	0.50	0	1	<0.006, <0.006
						2	15.39,15.79
					3	1	(0.0118)
						2	10.86,11.02
			Hay		3	1	(0.019)
						2	59.91,54.14

[1] Three foliar applications of Intrepid 2F @ 0.16 lb ai/A each were made

[2] LOQ = 0.02 ppm, Values <LOQ but >LOD reported in parentheses

TABLE C.4. Summary of Residue Data from Crop Field Trials with Methoxyfenozide.

Commodity	Total Applic. Rate, (lb ai/A)	PHI (days)	Residue Levels (ppm)*						
			n	Min.	Max.	HAFT**	Median	Mean	Std. Dev.
Alfalfa									
Forage	0.49-0.51	0	22	9.86	31.44	27.14	14.72	16.61	5.42
		3	18	5.71	47.27	43.89	11.06	15.44	10.97
Hay		3	18	12.85	59.11	55.98	43.19	41.86	12.32
Clover									
Forage	0.50-0.51	0	19	3.74	15.79	15.59	9.14	9.16	3.02
		3	20	1.55	14.98	13.74	7.69	7.32	3.93
Hay		3	18	5.03	59.91	57.03	35.51	30.47	18.02

* LOQ values were used for results reported as <LOQ.
** HAFT = Highest Average Field Trial.

D. CONCLUSION

Nine alfalfa and clover field trials were conducted to collect data on the residue of methoxyfenozide. At each test location, four applications of Intrepid 2F were applied to the treated plots in each trial as a foliar broadcast spray at the rate of approximately 0.125 lb ai/A (maximum season total of 0.5 lb ai/A) with PHIs of 0- and 3-days for forage and 3-days for hay. The analytical method has been found suitable for data collection and enforcement purposes. In the alfalfa field trials, maximum residues of 31.44 ppm and 47.27 ppm were seen on forage at 0- and 3-day PHIs, respectively. Maximum residues on alfalfa hay were 59.11 ppm. In the clover

field trials, maximum residues of 15.79 ppm and 14.98 ppm were seen on forage at 0- and 3-day PHIs, respectively. Maximum residues on clover hay were 59.91 ppm. The submitted storage stability data indicate that the residues were stable under the conditions in which the samples were held between harvest and analysis.

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F. DOCUMENT TRACKING

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